



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/551,215	04/17/2000	Charles Byron Alexander Shawcross	37824-0002	1632

7590 11/06/2003

P. Scott Macle  
Ridout & Maybee  
19th Floor  
150 Metcalfe Street  
Ottawa, ON K2P 1P1  
CANADA

EXAMINER

ALI, AHMEDUR R

ART UNIT	PAPER NUMBER
----------	--------------

2131

DATE MAILED: 11/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/551,215

Applicant(s)

SHAWCROSS, CHARLES BYRON  
ALEXANDER

Examiner

Ahmedur Ali

Art Unit

2131

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 April 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 April 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. The application has been examined. Claims 1-24 are pending in this Office Action.

#### ***Drawings***

2. The drawings are objected to because the circles and lines in Figs. 1-3 are not uniform and solid. A proposed drawing correction or corrected drawings are required in reply to the Office Action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

#### ***Specification***

3. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

Art Unit: 2131

4. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-9, 11, 13-21 and 23 are rejected under 35 U.S.C. 102(e) as being anticipated by Hayden (U.S. Patent No. 6,018,771). With respect to claim 1, Hayden teach in a multicast capable Internet Protocol (IP) network, a method and system for communicating multicast packets between end stations on a chosen multicast (IP) address from a plurality of multicast IP addresses for multicast communication (see abstract; Fig. 1; col. 3, lines 18-34), the method comprising the step of:

selectively varying the chosen multicast IP address from the plurality of multicast IP addresses according to a predetermined scheme known to the end stations; and communicating the packets on the chosen multicast IP address (see col. 1, lines 53-56, 65-67 to col. 2, lines 1-20).

7. Claims 2 and 14 are rejected as above in rejecting claims 1 and 13, wherein the packets are communicated to an end station having subscribed to a set of multicast IP addresses comprising at least one multicast IP address from the plurality of multicast IP addresses for multicast communication and including the chosen multicast IP address for transmitting the packets (see col. 1, lines 65-67 to col. 2, lines 1-20).

8. Claims 3 and 15 are rejected as above in rejecting claims 2 and 14, wherein the set of multicast IP addresses is selectively varied according to a predetermined scheme known to the end stations (col. 2, lines 8-35).

9. Claims 4 and 16 are rejected as above in rejecting claims 3 and 15, wherein the predetermined scheme for selectively varying the set of multicast IP addresses comprises randomly adding to and dropping from the set of multicast IP addresses (see col. 2, lines 8-35, 44-57).

10. Claims 5 and 17 are rejected as above in rejecting claims 1 and 13, wherein the step of selectively varying the chosen multicast IP address comprises:

randomly hopping from one multicast IP address to another (see col. 4, lines 39-65; col. 6, lines 43-48)

11. Claims 6 and 18 are rejected as above in rejecting claims 3 and 15, wherein the step of selectively varying the chosen multicast IP address comprises:

randomly hopping from one multicast IP address to another chosen from the set of multicast IP addresses (see col. 6, lines 6-24, 43-48).

12. Claims 7 and 19 are rejected as above in rejecting claims 1 and 13, further including the steps of:

receiving unicast data intended for a host site by at least one end station for transmitting multicast packets (see col. 2, lines 8-35); and

formatting said unicast data into said multicast packets for communicating on said chosen multicast IP address to at least one end station for receiving multicast packets (see col. 2, lines 8-35);

wherein at least one of said end station for receiving multicast packets is capable of communicating said unicast data to said host site (see col. 2, lines 8-35).

13. Claims 8 and 20 are rejected as above in rejecting claims 7 and 19, further including the steps of:

identifying to the network a preferred route to the host site through said at least one end station for transmitting multicast packets (see col. 2, lines 8-35; col. 4, lines 26-45).

14. Claims 9 and 21 are rejected as above in rejecting claims 6 and 18, further including the step of:

filtering said unicast data received and limiting the rate of communicating . multicast packets (see col. 1, lines 65-67 to col. 2, lines 1-7)

15. Claims 11 and 23 are rejected as above in rejecting claims 6 and 18, wherein said end stations for transmitting multicast packets are located within a single autonomous system of the network (see col. 2, lines 8-35; col. 3, lines 18-34).

### ***Claim Rejections - 35 USC § 103***

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claims 10 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayden U.S. Patent No. 6,018,771 in view of Caronni et al U.S. Patent No. 6,049,878 ('Caronni' hereinafter).

18. With respect to claims 10 and 22, Hayden teaches all the limitations as above as indicated in claims 9 and 21.

Hayden does not explicitly disclose identifying and discarding unicast data implementing an attack on said host site.

However, Caronni disclose the step of filtering comprises identifying and discarding unicast data implementing an attack on said host site (see col. 7, lines 40-52; col. 9, lines 57-65).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Caronni within the system of Hayden to arrive at the invention as claimed because both references are directed to a network communicating multicast packets and unicast data between end stations, and because the implementation of discarding unicast data implementing an attack on said host site would alleviate most or all of the effects of certain types of Denial of Service attacks or information gathering, further improving the level of security and extending the capabilities of the combined system.

19. Claims 12 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayden (U.S. Patent No. 6,018,771) in view of Li U.S. (Patent No. 6,606,706).



20. With respect to claims 12 and 24, Hayden teaches all the limitations as above as indicated in claims 11 and 23.

Hayden does not explicitly disclose wherein said end station for transmitting multicast packets are located adjacent to border routers within the single autonomous system of the network.

However, Li disclose wherein said end station for transmitting multicast packets are located adjacent to border routers with the single autonomous system of the network (see col. 2, lines 28-48).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Li within the system of Hayden to arrive at the invention as claimed because both references are directed to a network communicating multicast packets and unicast data between end stations, and because the implementation of transmitting multicast packets which are located adjacent to border routers would efficiently route multicast packets through the network or internetwork, further improving the level of efficiency and reliability of the system to be able to determine the best route for a given packet to take, and furthermore extending the capabilities of the combined system.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Beser (U.S. Patent No. 6,189,102) discloses a method for authenticating of network devices in a data-over cable system.

Sherer (U.S. Patent No. 5,935,245) discloses a method and apparatus for providing secure network communications.

Lowe et al. (U.S. Patent No. 6,442,617) disclose a method and system for filtering multicast packets in a peripheral component environment.

Picazo, Jr. Et al. (U.S. Patent No. 5,771, 349) disclose a network packet switch using shared memory for repeating and bridging packets at media rate.


Williams (U.S. Patent No. 5,559,883) discloses a method and apparatus for secure data packet bus communication.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ahmedur Ali whose telephone number is 305-4667. The examiner can normally be reached on 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on 305-9648. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 305-3900.

ara

  
AYAZ SHEIKH  
SUPERVISORY PATENT EXAMINER  
TECHNOLOG. CENTER 2100